IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.:	10/706,206	§	Confirmation No.:	5994
Applicant:	Williams, Gregory D.	§		
Filed:	11/12/2003	§		
TC/A.U.:	3672	§		
Examiner:	Smith, Matthew J.	§		
Title:	Casing Hanger Assembly with Rupture Disk in Support Housing	§		
Docket No.:	DRIA-148	§		

RESPONSE TO OFFICE ACTION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The Office Action of September 16, 2005 has been received and duly noted. All claims except Claim 15 were rejected as being unpatentable over Priebe '562 in view of Burris '915, or that combination in view of Baker '845. Applicant respectfully submits that none of the references discloses or suggests the invention set forth in the pending claims.

The Examiner contends that Priebe discloses a support housing 103 positioned along an outer casing string for supporting a casing hanger 109. In fact, the housing 103 supports a tubing hanger 109 which supports tubing string 118. In any event, the reference clearly fails to disclose a casing hanger support housing positioned along an outer casing string for supporting a casing hanger and an inner casing string in the well,

as recited in Claim 1. The Examiner further contends that the failsafe valve 106 maintains a desired pressure differential between an interior and exterior of the outer casing string. Valve 106 is a failsafe relief valve, and is connected with a relief valve tubing string 105 to permit pressure measurements to be taken with the failsafe shutoff valves 114 positioned between the tubing 115 and the upper production tubing 116. Failsafe valve 106 may be responsive to annulus pressure surrounding the tubing string 118, but clearly does not maintain a desired pressure differential between an interior and an exterior of the outer casing string, as recited in Claim 1. Priebe is concerned with circulation in a well and discloses use of a safety valve to relieve pressure in the annulus surrounding the tubing string. The logical assumption is that the valve 106 opens to relieve pressure, then thereafter closes to retain pressure.

The Examiner further contends that Priebe '562 discloses a lockdown member 112 for fitting within a lockdown groove in an interior surface of the casing hanger support housing. Set screw 112 secures the sheer pin 110 and the pressure forming ring 111, but the set screw 112 is not a lockdown member which fits within a lockdown groove in an interior surface of the casing hanger support housing, as recited in Claims 2, 8 and 13.

The Examiner further contends that Priebe '562 discloses the method of the invention by maintaining a desired pressure differential between a space within the outer casing string and a space exterior of the outer casing string. As above explained, valve 106 may open to vent pressure under a tubing string hanger and in the annulus surrounding the tubing string and later close, but does not maintain the desired pressure differential between the interior and the exterior of the outer casing string.

The present invention is directed to a casing hanger support assembly for supporting an inner casing string within a well containing an outer casing string. Burris '915 discloses a rupture disk in the box of a drill string. In a drilling operation, Burris thus teaches the ability to maintain a desired pressure differential between the interior and the interior of the drill string while drilling. This is markedly different, of course, than the system of the present invention. The Examiner contends that Burris discloses a rupture disk in a wall of a housing, but it is in the box of the pipe string. There is no suggestion that a disk could be placed in the environment of this invention.

With respect to Baker, a blowout plug 16 is concerned with opening the circulation port in a casing immediate its ends when circulation cannot be established through the lower end of the casing. Accordingly, Baker teaches providing a plug at various locations along the length of the casing string, so that when lowering the casing into the wellbore, circulation downward through the casing can continue by blowing out the plug when the casing is otherwise shut off.

With respect first to the combination of Priebe and Burris, it is clearly not obvious to replace the valve 106 in Priebe with a rupture disk as taught in Burris. The purpose served by the safety valve is not analogous to the purpose of the rupture disk, and neither reference teaches or suggests maintaining a desired pressure differential between an interior and exterior of the outer casing string with the rupture disk or blowout plug. Moreover, the Burris disk cannot open then later close in the manner of valve 106.

Nothing in the cited references discloses or suggests that the blowout plug or rupture disk be provided "high" in the casing string, i.e., in a wall of the casing hanger support housing, for maintaining a desired pressure differential between the interior and

the exterior of the outer casing string. There is no reason to make the combination of Priebe and Burris, and that combination, even if somehow made, would not read upon the pending claims, and would not achieve the purpose of the Priebe valve 106. The prior art cited by the Examiner certainly shows that it is obvious to provide a rupture disk or a blowout plug along the length of a tubular string when conducting a drilling operation, or when running a casing string in a hole under a situation where the bottom of a casing string may become plugged. Neither of those situations exist with respect to casing hanger support assembly as recited in the present invention. None of the cited reference teach or suggest positioning a rupture disk or a blowout plug in a wall of the casing hanger support housing for maintaining this desired pressure differential between an interior and the exterior of the outer casing string.

As recited in Claim 5 and 6-10, the casing hanger support assembly is of the type that includes a tubing string suspended in the well within the inner casing string, and is thus part of the permanent installation rather than a drilling operation. The combination with such a tubing string is also not disclosed in the cited references.

In view of the above, early allowance of the application is requested.

Respectfully submitted,

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CERTIFICATE OF MAILING

I certify that this document is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450 [37 CFR 1.8(a)] on January 20, 2006.

Khristine McNeil

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